

## List of Current Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1 - 13 (Cancelled).

14. (Currently Amended) A sensor arrangement, comprising:  
at least two sample chambers;  
at least two potentiometric FET-sensors, preferably ISFET-sensors or ChemFET-sensors, having, in each case, a sensitive surface section, wherein each sensitive surface section lies in flow connection with one of said at least two sample chambers; and

a reference cell having a reference medium for providing a reference potential, wherein:

said at least two sample chambers are connected with the reference medium via an electrolyte bridge[.] and

said electrolyte bridge including and electrolyte canal which communicates with said at least two sample chambers via diaphragms.

15. (Previously presented) The sensor arrangement as claimed in claim 14, further comprising:

a first module, which contains said at least two sample chambers.

16. (Previously presented) The sensor arrangement as claimed in claim 15, further comprising:

at least a second module, which has a plurality of potentiometric FET-sensors.

17. (Previously presented) The sensor arrangement as claimed in claim 15, further comprising:

a plurality of second modules, each of which has a potentiometric FET-sensor.

18. (Previously presented) The sensor arrangement as claimed in claim 15, wherein:

said first module comprises a plate-shaped platform with bores, which serve as sample chambers.

19. (Previously presented) The sensor arrangement as claimed in claim 18, wherein:

said bores traverse the platform; and

said at least a second module, or second modules, are embodied as floor elements, which close the traversing bores from the underside of said first module.

20. (Previously presented) The sensor arrangement as claimed in claim 18, wherein:

said potentiometric FET-sensors are integrated into said second module in such a manner that, in each case, a FET-sensor aligns with its one of the traversing bores.

21. (Previously presented) The sensor arrangement as claimed in claim 14, wherein:

said electrolyte bridge extends via electrolyte canals, which are formed in the platform.

22. (Previously presented) The sensor arrangement as claimed in claim 21, wherein:

said platform comprises a plurality of elements, preferably a plurality of layers, and the electrolyte canals are located in an interface between two neighboring elements.

23. (Currently amended) The sensor arrangement as claimed in claim [[14]] 16, wherein:

said electrolyte bridge extends via electrolyte canals which are integrated in said second module.

24. (Previously presented) The sensor arrangement as claimed in claim [[14]] 16, wherein:

said reference cell has a potentiometric reference-FET-sensor for providing a pseudo-reference-potential, which is registered against the reference-potential of a reference electrode.

25. (Previously presented) The sensor arrangement as claimed in claim 24, wherein:

said reference electrode is contacted with the reference medium in said reference cell.

26. (Previously presented) The sensor arrangement as claimed in claim 25, wherein:

the potentials  $U_{\text{diff}1}$ ,  $U_{\text{diff}2}$ , ...  $U_{\text{diff}N}$  of N FET-sensors in the sample chambers are determined against the pseudo-reference-potential, and the measured-variable-relevant, potential differences are, in each case, determined by difference formation between the pertinent potential and the reference potential - thus, in the case of pH, according to the formulas  $U_{\text{pH}1...N} = U_{\text{diff}1...N} - U_{\text{diffref}}$ .